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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/888,316
Filing Date: June 22, 2001
Appellant(s): VOLPERT, THOMAS R.

Bradley D. Lytle
Reg. No. 40,073
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/15/2006 appealing from the Office action mailed 7/20/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because for two of the limitations summarized the portions of the specification pointed to do not accurately explain the claim limitation.

On Page 3 Lines 4-6, the appellant states that "[T]he control code index being defined prior to receiving input data string is described at page 7 line 6 through page 8 line 17 and at page 13 line 1 through page 14 line 8". However, these portions of the specification merely describe the use of the control code index in selecting a control code and not when the control code index was generated compared to when input data was received.

On Page 3 Lines 11-16, the appellant states that "Independent Claim 1 further recites a step of generating a control code associated with a determined order using the control code index, the values of the generated control code being independent of input data strings specific characteristics. Support for these claimed features is found at Fig. 1 (140), Fig. 2 (140), Fig 3 (62), control code index application at page 13, line 24 through page 14, line 7; page 18, lines 14-19 (without analyzing the input data string so as to be independent thereof)". Again, the cited portions of the specification simply describe the generation of the control code, rather than explaining that "the values of the generated control code being independent of input data string specific characteristics".

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,656,178	De Maine et al.	4-1972
5,884,269	Cellier et al.	3-1999
6,772,343	Shimizu et al.	8-2004
5,479,512	Weiss	12-1995
5,861,887	Butler et. al.	1-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 5-10, 21-23, and 25-62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 21, 23, and 62, the limitations of an "index being defined prior to receiving the input data string", and the "control codes are independent of input data string specific characteristics" are not supported by the specification. Although there was disclosure of providing a control code index, there was no description of when the index was defined, or more

specifically that it was defined prior to receipt of the input data string, or that the values of the control codes were independent of the input data string. As such, it is unclear whether applicant had possession of the claimed invention at the time of application. Therefore, claims 1, 3, 5-10, 21-23, and 25-62 are rejected for failing to meet the written description requirement of 35 USC 112 1st Paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5, 8-10, 21-23, 25-26, 29-40, 44-55, and 59-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine et al. (US Patent Number 3,656,178) hereinafter referred to as De Maine, and further in view of Cellier et al. (US Patent Number 5,884,269) hereinafter referred to as Cellier.

Regarding claim 1, De Maine disclosed a method of encrypting an input data string including a plurality of bits of binary data with a processing device communicatively coupled to a memory having an encryption program stored therein, the method comprising: receiving an input data string for encryption at the processing device (See De Maine Col. 91 Lines 67-73); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating a code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes);

generating a position code by identifying the positions of each of the 2^n different configurations of n bits in an input data string in accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the control code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to receiving the input data string for encryption at the processor, the control code index including a plurality of control codes wherein the values of the plurality of control codes are independent of input data string specific characteristics, or generating a control code using the control code index.

Cellier teaches that in a coding method, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be "generated" (chosen from the index) and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select with the encoded data in order to allow the decoder to identify which table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the optimum encoding table.

Regarding claim 21, De Maine disclosed a method for encrypting an input data string including a plurality of bits of binary data (See De Maine Col. 2 Paragraph 1), the method comprising: receiving an input data string for encryption (See De Maine Col. 91 Lines 67-74); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating a code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes); generating a position code by identifying the positions of each of the 2^n different configurations of n bits in an input data string in accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the control code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to receiving the input data string for encryption at the processor, the control code index including a plurality of control codes wherein the values of the plurality of control codes are independent of input data string specific characteristics, or generating a control code using the control code index.

Cellier teaches that in a coding method, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be "generated" (chosen from the index) and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a

table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select with the encoded data in order to allow the decoder to identify which table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the optimum encoding table.

Regarding claim 23, De Maine disclosed a computer readable medium including computer program instructions that cause a computer to implement a method of encrypting an input data string, including a plurality of bits of binary data (See De Maine Col. 2 Paragraph 1), the method comprising: receiving an input data string for encryption (See De Maine Col. 91 Lines 67-74); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating a code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes); generating a position code by identifying the positions of each of the 2^n different configurations of n bits in an input data string in accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the control code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to receiving the input data string for encryption at the processor, the control code index including a plurality of control codes wherein the values of the plurality of control codes are independent of input data string specific characteristics, or generating a control code using the control code index.

Cellier teaches that in a coding method, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be "generated" (chosen from the index) and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select with the encoded data in order to allow the decoder to identify which table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the optimum encoding table.

Regarding claim 62, De Maine disclosed an electronic device for encrypting an input data string, including a plurality of bits of binary data, comprising: a processor configured to receive an input data string for encryption (See De Maine Col. 91 Lines 67-73); determining upon reception of the input data string, an order in which to query the presence of each of two 2n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table), and generates a code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the processor generating a position code, through the identification of positions of each of the two 2n different configurations of n bits in the input data string in accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map) to combine

the control code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to receiving the input data string for encryption at the processor, the control code index including a plurality of control codes wherein the values of the plurality of control codes are independent of input data string specific characteristics, or generating a control code using the control code index.

Cellier teaches that in a coding method, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be "generated" (chosen from the index) and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select with the encoded data in order to allow the decoder to identify which table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the optimum encoding table.

Regarding claims 3 and 25, De Maine and Cellier disclosed determining an order comprises selecting a predetermined order (See De Maine Col. 91, 256 Byte Table and the rejection of claim 1 above).

Regarding claims 5, 22, and 26, De Maine and Cellier disclosed dividing the input data string into a plurality of blocks of data (See De Maine Col. 92 Lines 31-38).

Regarding claim 8, and 30, De Maine and Cellier disclosed generating a plurality of block codes associated with a plurality of blocks of data, each block code indicating the number of bits within the associated block of data (See De Maine Col. 101 Lines 45-52).

Regarding claim 9, and 31, De Maine and Cellier disclosed combining the each of the plurality of block codes with the control code and the position code for the associated block of data (See De Maine Col. 101 Lines 45-52 and the rejection of claim 1 above).

Regarding claim 10, and 32, De Maine and Cellier disclosed that determining an order comprises determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string (See De Maine Col. 101 Lines 20-25).

Regarding claims 29, and 50, De Maine and Cellier disclosed that the computer readable code for determining an order further comprises computer readable code for determining a first order associated with a first block of data and determining a second order associated with a second block of data wherein the first order is different than the second order (See De Maine Col. 91 Lines 67-74).

Regarding claim 33, De Maine and Cellier disclosed that the computer readable code for determining an order further comprises computer readable code for determining an order in which to query the presence of each of 2^n different configurations of n bits based on an analysis of the input data (See De Maine Col. 91 Lines 67-74).

Regarding claims 34 and 48, De Maine and Cellier disclosed generating the control code based on the input string (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above), but failed to disclose randomly generating the control code. However, it was well known in the art at the time of invention that an input to a function could be random. It therefore would have been obvious to the ordinary person skilled in the art at the time of invention that when the input was random, the control code generated would also be random since it was based on the input. This would have been obvious because the ordinary person skilled in the art would have used what was well known in the art to come to this conclusion.

Regarding claims 35, and 49, De Maine and Cellier disclosed generating the control code based on a mathematical formula (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above)

Regarding claims 36 and 51, De Maine and Cellier disclosed determining whether the input data string can be compressed simultaneously as it is encrypted (See De Maine Col. 101 Lines 20-28).

Regarding claims 37 and 52, De Maine and Cellier disclosed dividing the input data string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n different configurations of n bits with each of the n bit sequences (See De Maine Col. 91 Lines

67-74); determining the frequency of each of the 2^n different configurations appearing in the input data string (See De Maine Col. 91 Lines 67-74); determining whether a specific relationship exists between values of the frequencies of each of the individual 2^n different configurations appearing in the input date string wherein the existence of the specific relationship is indicative of the presence of a characteristic within the input data string and wherein the presence of the characteristic indicates that the input data string can be compressed simultaneously as it is encrypted (See De Maine Col. 101 Lines 20-25); selecting a first position code routine associated with the determined order when the specific relationship exists, the first position code being operable to encrypt and compress the input data string (See De Maine Col. 101 Lines 20-25 and Col. 92 Paragraphs 1-2); and selecting a second position code routine associated with the determined order when the specific relationship does not exist, the second position code being operable to encrypt the input data string without any compression (See De Maine Col. 101 Lines 20-25 and Col. 92 Paragraphs 1-2).

Regarding claims 38 and 53, De Maine and Cellier disclosed that the determining the order in which to query the presence of each of 2^n different configurations of n bits within an input data string comprises computer readable code for determining the order in which to query the presence of each of 2^2 different configurations of 2 bits within an input data string (See De Maine Col. 91 Lines 47-48).

Regarding claims 39 and 54, De Maine and Cellier disclosed dividing the input data string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n different configuration of n bits with each of the n bit sequences of the input data string (See De

Maine Col. 91 Lines 67-74); determining a first number representative of the number of times the most frequently occurring 2^n configuration appears in the input string; determining a second number representative of the number of times the second most frequently occurring 2^n configuration appears in the input string; determining a third number representative of the number of times the third most frequently occurring 2^n configuration appears in the input string determining a fourth number representative of the number of times the fourth most frequently occurring 2^n configuration appears in the input string (See De Maine Col. 91 Lines 67-74); selecting a first position code routine associated with the determined order when the first number is greater than the sum of the third number and the fourth number, the first position code routine being operable to encrypt and compress the input data string (See De Maine Col. 92 Paragraphs 1-2 and Col. 101 Lines 20-27); and selecting a second position code routine associated with the determined order when the first number is not greater than the sum of the third number and the fourth number, the second position code routine being operable to encrypt the input data string without any compression (See De Maine Col. 92 Paragraphs 1-2 and Col. 101 Lines 20-27).

Regarding claims 40 and 55, De Maine and Cellier disclosed that generating a control code associated with the determined order, further comprises: generating a first control code associated with the determined order when the first position code routine is selected; and generating a second control code associated with the determined order when the second position code routine is selected wherein the first control code is different than the second control code (See De Maine Col. 92 Paragraphs 1-2).

Regarding claims 44 and 59, De Maine and Cellier disclosed selecting a default order (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above).

Regarding claims 45-46 and 60-61, De Maine and Cellier disclosed determining an order based on the relative frequencies of the combinations of n bits (See De Maine Col. 91 Lines 67-74).

Regarding claim 47, De Maine and Cellier disclosed determining the order based on an analysis of the input data string (See De Maine Col. 91 Lines 67-74).

Claims 6-7, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine and Cellier as applied to claims 5, and 26 respectively, and further in view of Shimizu et al. (US Patent Number 6,772,343) hereinafter referred to as Shimizu.

De Maine and Cellier disclosed blocking the input data into block sizes of a certain range (See De Maine Col. 92 Lines 31-38) but failed to disclose determining the size of the blocks randomly or mathematically.

Shimizu teaches that in a block encoding system, generating each block size randomly makes illicit access of the data more difficult and makes the cryptosystem more robust (See Shimizu Col. 5 Lines 9-18). Shimizu further teaches that the random sizes are generated mathematically using a seed (See Shimizu Col. 15 Paragraphs 3-7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Shimizu in the invention of De Maine and Cellier to mathematically generate random block lengths. This would have been obvious because the

ordinary person skilled in the art would have been motivated to provide the added security of random block lengths to the compressed data.

Claims 41-42, and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine and Cellier as applied to claim 1 above, and further in view of Weiss (US Patent Number 5,479,512).

De Maine and Cellier disclosed compressing input data (See De Maine Cols. 91-92), but failed to disclose re-encrypting the data after the compression was performed.

Weiss teaches that after compression is performed, the compressed data should be XORed with a key, in small blocks at a time (See Weiss Col. 5 Paragraphs 4-5 and Col. 6 Paragraph 3 and Fig. 3A).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Weiss in the compression system of De Maine and Cellier by XORing the coded data with a key in small blocks at a time. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect the data from unauthorized observing.

Claims 41, 43, 56, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine and Cellier as applied to claim 1 above, and further in view of Butler et al. (US Patent Number 5,861,887) hereinafter referred to as Butler.

De Maine and Cellier disclosed compressing input data (See De Maine Cols. 91-92), but failed to disclose re-encrypting the data after compression was performed.

Butler teaches that compression should be repeated as many times as necessary in order to make the data being compressed sufficiently small (See Butler Col. 3 Paragraph 2).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Butler in the compression system of De Maine and Cellier by repeating the compression on the coded output as many times as necessary to get the output to be sufficiently small. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide more efficient storage of the audio data.

(10) Response to Argument

The appellant has presented five different issues.

Issue #1

The appellant argues that the office has failed to establish required *prima facie* and factual showings of non-compliance with the written description requirement of 35 USC 112 1st Paragraph. The appellant argues that the examiner did not "present 'evidence or reasoning to explain why persons skilled in the art would not recognize' a disclosure of : (a) 'values of the generated control code being independent of input data string specific characteristics'; (b) 'the control code index being defined prior to receiving the input data string' upon review of applicant's disclosure and figures." The appellant further points to MPEP § 2163.04 as requiring the examiner to :

> (A) Identify the claim limitation at issue; and (B) Establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed."

And the appellant claims that (B) has not been met. However, the examiner points out the rest of MPEP § 2163.04(B), which the appellant failed to quote above, which states :

> A simple statement such as "Applicant has not pointed out where the new (or amended) claim is supported, nor does there appear to be a written description of the claim

> limitation '____' in the application as filed." may be sufficient where the claim is a new or amended claim, the support for the limitation is not apparent, and applicant has not pointed out where the limitation is supported.

The examiner emphasizes the fact that this is the situation at hand, in which the examiner has made a statement similar to the above, and therefore has set forth express findings of fact which support the written description conclusion. The examiner further addressed the appellant's attempts to show support for the limitations and has therefore met the burden of showing a lack of written description of the specific claim limitations. Furthermore, the examiner has addressed the sections of the instant specification, which the appellant has cited in the instant Appeal Brief, below.

The appellant argues, regarding the limitation "the values of the generated control code being independent of input data string specific characteristics" (it is important to note that the claim limitation requires that the values be independent of [generic] input data string specific characteristics rather than specific characteristics of **the** input data string), that because in one embodiment the control code is generated without analyzing **the** input data string, the values of the control code must be independent of input data string specific characteristics. The examiner points out two flaws in this reasoning.

First, the limitation that is not supported is that "the values of the generated control code being independent of input data string specific characteristics", and **not that** "the generation of the values of the control code is independent of input data string specific characteristics". Second, the values are required to be independent of "input data string specific characteristics" and not "the input data string". The examiner points to page 7 lines 6-16 of the instant specification, wherein the control code is explained as :

> A control code 42, 44 is generated (step 140) for each block 22, 24 in response to the results of the data analysis (step 130). **The control code 42, 44 dictates: (1) the number of bits that comprise each of the groups of bits that are analyzed during the encryption of the input data string 20 and decryption of the encrypted string of data 80; (2) the order in which the combinations of bits are identified in the position code 52, 54**; (3) the position code routine that is used to generate position code 52, 54; and (4) whether or not additional encryption is utilized. The control code 42, 44 preferably comprises eight bits of data thereby allowing for 256 different control codes.
>
> In generating the control code 42, 44, a control code index 60 is utilized. The control code index 60 comprises a list of control codes that each correspond to a specific order of the combinations of bits. The four combinations of two bits (00, 01, 10, 11) can be arranged in 24 different orders.

This shows that the control code contains input data string specific characteristics (i.e. the number of bits that comprise each of the groups of bits that are analyzed; the order in which the combinations of bits are identified). Page 8 Lines 20-21, Page 9 Lines 11-18, and Page 10 Lines 3-10 of the instant specification further shows that the values of the control code are used to specify the order in which combinations of bits are identified in the input data string.

> The position code 52, 54 identifies the position of each combination of bits in an order signified by the control code 42, 44.
>
> The first position code routine identifies the position of the combinations by determining whether or not each of the combinations of bits matches the successive groups of bits that comprise the blocks of data 22, 24. **Starting with the first group of two bits from the first block of data 22, the group of bits is compared with the first combination of bits, as identified in the control code 42**, to determine whether or not the two sets of bits match. If they do match, a 1 is recorded to signify a match at that position within the block of data 22. If they do not match, a 0 is recorded to signify a non-match at that position. This process is repeated until each of the successive groups of bits that comprise the block of data 22 has been compared with the first combination.
>
> The second position code routine also identifies the position of the combinations by determining whether or not each of the combinations matches the successive groups of bits that comprise the blocks of data 22, 24. However, the combinations are compared with the groups of bits in a different manner. **Starting with the first group of two bits of the first block of data 22, the group of bits are compared with both the first and second combinations, as identified in the control code 42.** If the group of two bits matches either the first or second most frequent combinations, a 1 is recorded to signify a match at that position with respect to the block of data 22. This comparison process is repeated for each of the successive groups of two bits that comprise the block of data 22.

As is readily apparent from the above cited sections of the specification, independent of how the values were selected or generated, the values of the control code dictate the combinations of bits that are identified in the input data string. These combinations of bits fall within the scope of "input data string specific characteristics". Therefore because the values of the control code identify these combinations of bits, the values are not independent of input data string specific characteristics. As such, the specification fails to provide a written description of the claimed limitation in such a way that one of ordinary skill in the art would have recognized that the appellant was in possession of the invention as claimed at the time of application.

Again, the examiner points out that the appellant's arguments are based on the fact that the generation of the control code can be "random", but this does not change the fact that the values of the control code still dictate input data string specific characteristics to be identified in the input data string, and as such the control code, regardless of how it is generated (as it is not the generation that is claimed to be independent of input data string specific characteristics, but rather it is the values of the control code that are claimed as being independent of input data string specific characteristics), is not independent of input data string specific characteristics.

The appellant argues, regarding the limitation of "the control code index **being defined prior to** receiving the input data string", that the specification utilizes language like **"can be assigned"** and **"can be arranged"**. (The examiner points out that the cited portion of the specification merely states how combinations of two bits can be arranged and how control codes can be assigned, but never discusses when the assignment or arrangement occurs.) The appellant then **concludes, in the appeal brief,** that based on the use of the words "assigned" and

"arranged" it would have been clear to a person of skill in the art that the establishment of the control code index arrangements and assignments **may be prior to** the reception of data. Again, the examiner points out that this cited section merely discloses that the control code index can be created, but never discloses when it is created or more importantly that it is created prior to receipt of input data. Regarding newly added claim limitations, MPEP § 2163.I.B states the following :

> "While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure."

The specification does not expressly support the claim limitation that the control code index is defined prior to reception of input data, as evidenced by the appellant's inability to cite any portion of the original specification as showing this claimed feature. Furthermore, **the specification does not imply** that the control code index is defined prior to reception of input data. In fact, there is no discussion in the specification of any timeframe regarding when the input data is received and when the control code index is defined.

Furthermore, as evidenced below, **it was not inherent** that the control code index was defined prior to the receipt of input data. The examiner points out that the appellant has stated (and this statement was made only in the appeal brief dated 8/15/2006 and never in the specification) that the index "may be [defined] prior to the reception of data", but not that it has to be. The application is silent as to the point in time that the index is defined, and there are at least three different scenarios that could have occurred (note that none of these were discussed anywhere in the specification). The first scenario is that the index is defined, then the input is

received, and then the index is used in the encryption of the input. The second scenario is that the input is received, then the index is defined, and thereafter the index is used in the encryption of the input. The third scenario is that the input is received and the index is defined at the same time, and thereafter the index is used in the encryption of the input. All three of these scenarios are possible, **none were discussed in the specification**, and only one (the first) meets the limitation. Therefore, it was not inherent that the control code index was defined prior to the reception of input data.

The time based limitation was not added to the claims until after the examiner relied upon De Maine et al. which falls within the second scenario. The limitation does not appear to have been drafted based on the teachings of the instant application, but rather based on what is not taught by De Maine et al.

As such, for the reasons specified above, the specification does not expressly, inherently, or implicitly support the claim limitation. Therefore, the specification fails to meet the written description requirement of 35 USC 112 1st Paragraph.

Regarding the appellants argument B., on Page 12 of the appeal brief, that rephrasing of specification description is not new matter, the examiner does not see how this applies to the present claims, and the appellant has not shown otherwise. The examiner, for the reasons provided above, does not believe that this is a case of "rephrasing of specification description", but rather that this is a case where neither the limitations, nor a description commensurate with the scope of the limitations, has been provided in the specification. The appellant has not shown

any portions of the specification which could be "rephrased" into the claim limitations and as such the examiner feels that this particular argument is without merit.

Further, regarding appellant's arguments with respect to the Objections to the specification under 37 CFR 1.75(d)(1) and the Objections to the claim language, the examiner notes that these are petitionable matters and not matters to be decided by the BPAI, and as such have not been further addressed.

Issue #2

The appellant argues that the combination of De Maine et al. and Cellier et al. fails to teach the limitation of "generating a control code associated with the determined order using the control code index, **the values of the generated control code being independent of input data string specific characteristics**". Page 14 Line 1 through Page 17 Line 16 basically summarizes the compression method disclosed by De Maine et al. and relied upon by the examiner. The appellant, on page 16 lines 5-10 and page 17 lines 12-15, points out that De Maine et al. did not disclose the claim limitations of "the control code index being defined prior to receiving the input data string", or "the values of the generated control code being independent of input data string specific characteristics". However, the examiner points to the office action dated 7/20/2006, page 5 line 23 – page 5 line 2, where the examiner has admitted that De Maine fails to teach these very limitations. However, De Maine very briefly dismisses Cellier et al., on page 17 Lines 17-21 of the appeal brief, without providing any reasoning. The examiner notes that Cellier et al. was relied upon as teaching these limitations and as providing motivation to have combined the teachings of Cellier in the compression of De Maine et al. It is further pointed out

that the portion of Cellier et al. cited by the appellant, Col. 4 Lines 46-64, as not teaching these limitations is not nearly the entirety of Cellier et al. relied upon by the examiner in making the rejection. Conversely, the examiner has relied upon Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33 of Cellier et al. as teaching these limitations.

Cellier teaches that in a compression system, the use of a set (dictionary) of pre-selected tables provides a highly efficient and compact way of mapping statistics of the actual input in order to select the optimum encoding table, as can be seen in Cellier Col. 2 Lines 6-11. As previously pointed out, it would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a table dictionary including pre-selected tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select with the encoded data in order to allow the decoder to identify which table was used for encoding., because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the optimum encoding table. As such, the examiner believes that a proper *prima facie* case of obviousness of the claim language in view of De Maine et al. and further in view of the teachings of Cellier et al.

Issue #3

The appellant argues that Shimizu does not remedy the deficiencies of De Maine in view of Cellier. The examiner does not disagree, but points out that for the reasons expressed above,

De Maine in view of Cellier is not deficient with respect to the claims. Therefore, the examiner has not addressed this Issue further.

Issue #4

The appellant argues that Weiss does not remedy the deficiencies of De Maine in view of Cellier. The examiner does not disagree, but points out that for the reasons expressed above, De Maine in view of Cellier is not deficient with respect to the claims. Therefore, the examiner has not addressed this Issue further.

Issue #5

The appellant argues that Butler does not remedy the deficiencies of De Maine in view of Cellier. The examiner does not disagree, but points out that for the reasons expressed above, De Maine in view of Cellier is not deficient with respect to the claims. Therefore, the examiner has not addressed this Issue further.

To summarize, the examiner has addressed the appellant's arguments:

As per Issue #1, the examiner has addressed the appellant's arguments pertaining to whether the written description requirement has been met with regards to two claim limitations. Specifically, the examiner has shown where the specification is lacking and why one of ordinary skill would not have recognized that the appellant possessed the compression system in which the control code index was defined prior to receipt of the input string, and in which the control codes are independent of input data string specific characteristics.

As per Issue #2, the examiner has addressed the appellant's argument's against the combination of De Maine and Cellier by showing that the examiner did not rely on De Maine as teaching a control code index or that the control codes were independent of input data string specific characteristics, but rather that Cellier taught these limitations and as such the claim limitations were obvious in view of the combination of De Maine and Cellier.

As per Issues 3-5, the examiner pointed out that no new arguments were made and the prior art combinations rendered the claim limitations obvious for the same reasons given in the response to Issue #2.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Matthew Henning

October 23, 2006

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